

REMARKS

In response to the above Office Action, claims 1 and 2 have been amended to recite that the mole ratio of the complex to the zinc alkyl compound in the catalyst system is in the range of from about 1:10,000,000 to 1:100. Support for this can be found on page 14, lines 9-11 of the specification. Since this is narrower than the range of mole ratios set forth in claim 21, this claim has been cancelled. New claims 24 and 25 have been added to cover preferred ranges of the mole ratio which are also disclosed on page 14.

In addition, claims 4-8, 12-15, 18-20 and 22 have been amended to make them dependent from both claim 1 or claim 2 and new claims 26-43 added, that correspond respectively to claims 4-20 and 22, but dependent from allowed claim 3, to round out the scope of protection. Finally, new claim 44, dependent from claim 2, recites that the displacement of the grown alkyls as alpha-olefins from the zinc alkyl chain growth product is carried out using a Ni catalyst and new claim 45 further defines the catalyst. Support for claim 44 can be found on page 14, lines 16-18 and claim 45 on page 20, lines 24 and 32.

The indicated allowance of claims 3 and 23 and the subject matter of claims 8-19, which cover specific catalysts used in the chain growth catalyst system, is appreciated. However, with the proposed amendments to claims 1 and 2, it is believed these claims as well as claims 4-7 and 20 should also now be allowable. A Request for Continued Examination is being filed with this Reply to enable the Examiner to consider amended claims 1 and 2 at this time.

In the Office Action, the Examiner continued to reject claims 1, 2, 4-7 and 20 for being obvious over Young and claims 1, 2, 4-7 and 21 for being obvious over Mathys.

Since claims 1 and 2 now include an even narrower range of mole ratios than set forth in claim 21, which claim was not rejected over Young, it is believed amended claims 1 and 2 now define a patentable invention over Young and that further discussion of the reference is not necessary. Its withdrawal as a ground of rejection under §103 is therefore requested.

As pointed out in the last Reply, Mathys relates to the use of a zinc alkyl compound together with a transition metal complex as a catalyst system for the oligomerization of α -olefins. While the catalyst system of the reference may look similar to that claimed, the zinc alkyl compound is actually being used in the present invention as a reactant as well as being a catalyst. Thus, the zinc alkyl is forming a relatively stable product (or intermediate product) comprising the chain formed by the growth of the olefin attached thereto. The practical effect of this difference is illustrated by a comparison of the quantities of the alkyl zinc starting material employed in the process of the present invention with that used in the Mathys' process.

In the present process, and Mathys, the complex is present in catalytic quantities. However, in the present process the ratio of complex to zinc alkyl compound lies in the range, as now set forth in claims 1 and 2, of from about 1:10,000,000 to 1:100. This means that the molar amount of alkyl zinc compound is at least 100 times the amount of the complex and preferably is at least 200 times up to 500,000 times the amount. See page 14, lines 9-11 of the specification.

In Mathys, the ratio of transition metal to organometal (e.g., zinc alkyl) is 1:50 to 1:1, preferably 1:10 to 1:25. See page 10, lines 13-17 of the reference.

Thus not only is the claimed mole ratio now outside the range disclosed in Mathys, but the process claimed in claims 1 and 2 relates to an entirely different process, namely one that forms a "zinc alkyl chain growth product." There is nothing in Mathys that suggests such a process. Now that the mole ratios of the components claimed are outside those taught in Mathys, it is submitted that it cannot be said that such a process inherently occurs in Mathys as suggested by the Examiner. Withdrawal of Mathys as a ground of rejection under §103 is therefore also requested.

Moreover, clearly nothing is taught in Mathys concerning the process of claims 44 and 45 for the olefin displacement of grown alkyls as alpha-olefins from the zinc alkyl chain growth product.

It is believed claims 1, 2, 4-20, 22 and 24-45 together with claims 3 and 23 are now in condition for allowance.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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